

**Conference on Effectively Restoring Ecosystems
22-24 August 2000, St. Louis, Missouri**

BACKGROUND

Session: Plenary 5

Topic: Keynote Panel

Moderator and Recorder: Cheryl Smith, CECW-PG

Panelists:

- James F. Johnson, Chief, Planning and Policy Division, Office of the Deputy Commanding General for Civil Works, HQUSACE
- Benjamin N. Tuggle, Chief, Division of Habitat Conservation, US Fish and Wildlife Service
- Stephen E. Adair, Director of Conservation Programs, Ducks Unlimited, Inc.

Objective: To provide national perspectives on the effective restoration of ecosystems.

Description: Panelists shared their insights with respect to the effective restoration of ecosystems, with a focus on water and related land resources. In addition, Dr. Tuggle and Mr. Adair provided remarks concerning partnering experiences and/or opportunities between the US Fish and Wildlife Service/Ducks Unlimited and the Corps of Engineers.

HIGHLIGHTS

During his presentation, Dr. Johnson emphasized ecosystem restoration in the context of watershed planning. He noted that watershed planning provides an opportunity to address all water resources purposes in a holistic perspective. All planning should incorporate this perspective. The watershed approach, seeing problems within the context of the entire watershed, seems key to successful identification of problems and solutions.

Dr. Tuggle reviewed the mission of the US Fish and Wildlife Service as well as how they define an ecosystem. He noted that a major key to success of the ecosystem approach is partnerships. He discussed issues related to partnering with the Corps, including implementation of the Fish and Wildlife Coordination Act Transfer Fund Agreement, missed opportunities for wetlands restoration, expanded opportunities for ecosystem restoration, and measures that can be taken to increase partnership opportunities.

The perspective and experience of Ducks Unlimited, Inc. in ecosystem restoration was described by Dr. Adair. He described the process that Ducks Unlimited goes through to identify restoration needs and sites. He discussed restoration goals, techniques and guidelines. Dr. Adair outlined a number of advantages of partnership opportunities with the Corps and identified some past successes as well as future opportunities.

Following are biographies along with full presentations, which are reconstructions using the speaker's PowerPoint presentations. They do not accurately represent the actual spoken word.

James F. Johnson, Ph.D.
Chief, Planning and Policy Division
Office of the Deputy Commanding General for Civil Works
Headquarters, US Army Corps of Engineers

Biography:

Dr. James F. Johnson currently serves as Chief, Planning Division at the US Army Corps of Engineers Headquarters in Washington, DC. Dr. Johnson manages a national interdisciplinary planning program developing new water resource investments for navigation, flood damage reduction, storm protection, and ecosystem restoration. Under his leadership the Corps expends over \$100 million annually for larger projects and an additional \$90 million for small project and technical assistance programs and diverse mission-related research and development programs supporting these activities.

Dr. Johnson was born in Detroit, Michigan, and is a 1964 graduate of Wayne State University. He received a Master of Arts degree from Wayne State University in 1966, and a Ph.D. in geography from the University of Chicago in 1970. In 1976, he served in staff assignments in the U. S. Senate and House under the Congressional Fellowship program.

Before returning to Headquarters in September 1998, he was Chief, Planning Division Baltimore District for thirteen years. Prior to his assignment in Baltimore District, he spent fifteen years in Corps of Engineers Headquarters. His assignments included serving as Chief, Eastern Planning Management Branch with responsibility for oversight of Corps planning studies in the eastern United States; heading the U.S. Water Resources Council task force that revised economic evaluation procedures for Federal water resources projects; and Acting Assistant Director of Civil Works for the Upper Mississippi and Great Lakes region.

His awards include the Army Decoration for Meritorious Civilian Service in 1985, the Secretary of Army Award for Publications Improvements in 1982, and runner-up for the Secretary of Army's Pace Award in 1979.

Presentation:

Today I would like to discuss our initiatives in Corps of Engineers Headquarters, especially those involving watershed planning. I believe that much of what we are doing is relevant to watershed management and that we can be a valuable partner in addressing many watershed problems.

The Corps of Engineers maintains and regulates the navigable waters of the United States. Today, the Corps maintains over 12,000 miles of waterways. The Corps also carries out its major flood control mission with systems of dams and levees. The Corps of Engineers' 383 dams and 8500 miles of levees prevent \$16 billion in flood damages on an average annual basis. The Corps also has an active Flood Plain Management program providing important services to communities and to the public. While most of the past Corps of Engineers flood protection projects are structural, we are committed to giving full consideration to non-structural measures as well. The Corps' ecosystem restoration mission has evolved over the past decade, and is now an essential part of our program. Our Ecosystem Restoration mission provides an opportunity not only to restore valuable environmental resources, but also to carry out projects that more

effectively balances economic and environmental needs. In addition to its primary missions, the Corps of Engineers may address water resource problems through certain other authorities. Shore and coastal projects provide flood protection for coastal communities. Water supply, recreation, hydropower and fish and wildlife resources are included as project purposes in our multiple purpose dams and reservoirs. The Corps can often construct small projects more quickly through its continuing authorities program. These smaller projects do not require specific Congressional authorization.

We are currently investigating measures to restore the Everglades to a more natural historic condition, while balancing future requirements for other uses such as municipal and industrial and agricultural water supply. We are working in partnership with Department of Interior, EPA and other Federal agencies, state and regional agencies, and public interest groups to develop a plan that will balance future needs while restoring this unique resource.

The objective of ecosystem restoration is to restore the ecosystem to a less degraded, more natural condition, which should mimic, as closely as possible, conditions that would have occurred in the area absent human intervention. Ecosystem restoration mission maintains P&G principle of maximizing benefits compared to costs. For single purpose projects develop NER plan that reasonably maximizes ecosystem restoration benefits over costs. For multipurpose projects develop combined NED/NER plan that maximizes sum of net NED & NER benefits, offers best balance between the two objectives. Significance and scarcity are critical factors in determining whether environmental outputs exceed costs. These determinations are made subjectively. Outputs must be measurable and in a form where significance and scarcity can be described (i.e. acres of wetland habitat restored as opposed to tons of sediments removed).

Poplar Island is an island in Chesapeake Bay that is being restored through a effective partnership of environmental and economic interests. The ecosystem restoration project being constructed in the footprint of an eroding island in the Bay. It will serve as a placement site for 38 million CY of dredged material from the Baltimore Harbor navigation project over the next 24 years. Ultimately, the project will provide important wetland (555 acres) and upland habitat (555 acres). The project was planned and designed by a partnership that included the Corps of Engineers, EPA, Fish and Wildlife Service, National Marine Fisheries Service, and several agencies of the State of Maryland, including the Maryland Port Administration and the Maryland Environmental Service.

The Napa County Flood Control and Water Conservation District, and the Corps are partners in an effort to provide 100-year flood protection, restore a “living” river, and address watershed needs. The emphasis on preserving environmental qualities of the river has resulted in a project very different from a traditional channelization solution. The \$182 million project includes lowering old dikes, providing terraces for flood flows and 108 acres of new wetland habitat, utilizing a dry oxbow to bypass high flows, maintaining existing stream geometry by removing some bridges and replacing others, adding new levees and floodwalls, stabilizing river banks, adding grade control structures to reduce erosion, emphasizing aesthetics, and including recreation trails. We just signed a Project Cooperation Agreement and initiated construction.

Watershed Planning provides an opportunity to address all water resources purposes in a holistic perspective. Perhaps unique among Federal agencies, the Corps of

Engineers has been organized on major watershed boundaries. And while much of the recent attention to watersheds has been focused on the environmental aspects of watersheds, it is important that we consider the full range of watershed resources in our investigations. One example of a recent Corps of Engineers watershed resource study is in the Willamette River Basin. In partnership with the Oregon Department of Water Resources, we are investigating project modifications at 13 reservoirs for future needs, including navigation, water supply and recreation. Over 60 entities helped fund this study. Population growth, increasing development, expanding irrigation and listings under the Endangered Species Act are place new demands on the reservoirs that could effect project operations. The study will determine how and to what the extent the reservoirs may help to meet future water demands in the valley and if changes in project authorizations are necessary. Study will be complete in 2001.

All planning should incorporate a watershed perspective. It should maximize economic and environmental value of watershed resources. It should include a systematic and comprehensive treatment of watershed resources and sustainability of future watershed resources. Our guidance has been updated and reflects these priorities and principles. We converted the main body of the Notebook into a document of less than one hundred pages that lays out the fundamental aspects of the planning process and its various parts in plain English. This overhaul has given us planning guidance that is sufficiently clear so that everyone understands what we can do and how we should be doing it. It will help everyone to be aware of the range of opportunities available under our current authorities and policies.

The guidance also encourages systematic, comprehensive treatment of watershed resources. It follows planning principles and process based on P&G. There is an emphasis on reasonableness, sound judgment, and common sense. Planning should seek to balance economic development and environmental needs. The planning steps are described and the policies & procedures for each mission in one location. Appendices support main document with guidance details.

Balanced water resources involves creative planning to avoid having to choose, listening to all points of view and the need to develop better tools. We must underscore how our ecosystem restoration, flood protection and navigation missions in combination allow us to address and balance economic development and environmental needs, in watersheds and in urban environments.

As all the federal agencies have begun working much more closely together, we have discovered some principles that are key to achieving success in applying our various programs. One such, obviously, is making the Partnerships work effectively, and discussing priorities together with the communities. Thus we can better leverage our program applications so that everyone gets the maximum utility of each dollar expended. Clearly also, Interdisciplinary Teams make this possible, and the Corps has long used interdisciplinary teams to formulate solutions to problems. The watershed approach, seeing problems within the context of the entire watershed, seems key to successful identification of problems and solutions. Spot-by-spot problem solving does not address the full range of problems and can even unmask an undiscovered problem. And cost-sharing is essential for the Corps to participate with a willing sponsor.

I would also like to address the following topics, which relate what we are doing at Headquarters to provide high quality planning as a vital part of the Corps product delivery teams.

- Process Improvements
- Responsive Plans and Projects
- A Common Sense Process
- Partnerships

We are currently making several improvements to our processes. We are redefining the roles of our Headquarters, Divisions and Districts. The bottom line will be greater empowerment to our field offices where the work is done. We are streamlining the process for preparing and reviewing Corps studies and reports, to reduce the time and cost to reach a decision on project feasibility. We are also streamlining our planning guidance to make our process clear and understandable, to our project delivery teams, our partners and the public.

We are committed to continually improving our plans and our projects. We must view problems in a systems context, and the comprehensive watershed approach is an excellent example of this. We must explore the full range of alternatives -- structural and non-structural- in solving watershed resource problems. We must consider innovative solutions. While the term may be overused, we need to think “outside the box” when necessary. We should apply all of our programs and authorities in solving watershed problems. We should use technical assistance programs such as Planning Assistance to States, FPMS, and our continuing authorities when they provide a fast track response to a problem. Innovative solutions integral to the planning process. Equal consideration must be given to structural and non-structural measures. Plans may not limited to those implemented by the Corps. Vision is the foundation of sound planning.

Our process needs to be driven by common sense. For example, it doesn’t make sense for everyone to agree on the best solutions to problems, while our procedures cannot reflect the value of those solutions. Our process needs to balance economic development and the environment in solving problems. We should not have to choose between one or the other. Our process must be cost-effective, but it must also be comprehensive. We need to take some time in investigating each project to look at the larger system in which our problem fits. But we should do that efficiently and effectively. Our projects solve local problems, but they should also be the right answer from a global perspective.

We are committed to strong partnerships. Wherever possible, we should apply our Corps of Engineers capabilities in providing assistance. We are teaming with local, state and regional governments to help solve problems. Watershed planning is an excellent example of what our involvement should be. All Corps of Engineers projects are cost-shared. This contributes to the strength of our partnerships., but it sometimes slows the process. We will continue to work with our partners to make this system work effectively. We are committed to working with our other Federal agencies to addressing your problems more effectively. We have numerous success stories and lots of opportunities for Federal TEAMWORK. As far as I am concerned, that is the only path to follow.

Partnerships are an investment in water resources from Nation’s perspective. Partner successfully with sponsors and stakeholders. Partner as both lead and

cooperating agency. Incorporate public involvement from the start. Be responsive to national, state, and local concerns. Have a range of programs for timely, cost-effective solutions. Partnerships are essential to success.

Benjamin N. Tuggle, Ph.D.
Chief, Division of Habitat Conservation
US Fish and Wildlife Service

Biography:

In 1997, Dr. Benjamin N. Tuggle became the Chief, Division of Habitat Conservation, for the U.S. Fish and Wildlife Service. He administers National program activities associated with Federal activities; wetland and upland habitat protection; restoration and conservation; wetland mapping; Coastal Barrier Resources Act and other related conservation issues. He provides Service Policy direction for activities under Fish and Wildlife Coordination Act, NEPA, Clean Water Act, Federal Power Act, Coastal Barrier Resources Act and other related conservation laws for which the Service has specific responsibilities.

Previous to his current position, Dr. Tuggle served as the Field Office Supervisor, Chicago Illinois Field Office, U.S. Fish and Wildlife Service. During this time, 1991 through 1997, he was detailed to Washington, D.C., Capital Hill, to work with the Committee on Merchant Marine and Fisheries, House of Representatives as congressional committee staff. From 1985 until 1990 he served as Unit Leader, Grambling Cooperative Wildlife Project, Grambling State University, Grambling, Louisiana. He also served as Chief of the Research and Diagnostic Parasitology Division, the National Wildlife Health Research Laboratory, Madison, Wisconsin from 1981 to 1985.

Dr. Tuggle received his B.S. in Biology in 1975 from Fort Valley State College, Fort Valley, Georgia. His M.S. and Ph.D. in Zoology was received in 1977 and 1982, respectively; both from the Ohio State University in Columbus, Ohio. He has written a total of 16 publications in 8 referred scientific journals and 3 chapters in a U.S. Fish and Wildlife Service Resource Publication.

Presentation:

It's a pleasure to be here today to discuss the Fish and Wildlife Service's Ecosystem Approach, the Service's role in effective ecosystem restoration and Partnerships with the Corps of Engineers.

The Mission of the Fish and Wildlife Service is: "Working with others, to conserve, protect, and enhance fish, wildlife, and their habitats for the continuing benefit of the American people." This means that we must work together within the Service to achieve our ecosystem goals, and with others to do the same.

An ECOSYSTEM is a geographic area including all the living organisms (people, plants, animals, and microorganisms), their physical surroundings (such as soil, water, and air), and the natural cycles that sustain them. All of these elements are interconnected. Managing any one resource affects the others in that ecosystem. The ecosystem approach is comprehensive and holistic. It's based on the health of all of the biological resources and considers all of communities within the watershed.

All of the Service's field units (National Wildlife Refuges, National Fish Hatcheries, Law Enforcement, Ecological Services offices, Fishery Resources Offices, and others) within a watershed combine forces to tackle projects, improving efficiency and effectiveness. The Service has identified and defined boundaries for 53 ecosystem units by grouping USGS defined watersheds. There are 41 units in continental United States, 10 units in Alaska, 2 units in Hawaii, Puerto Rico and the Virgin Islands. Each unit is represented by an ecosystem team, which has developed its own biologically-based strategy.

A major key to success of the Ecosystem Approach is --- Partnerships. The Service cannot manage entire ecosystems alone to achieve its mission. The Service can't restore an ecosystem and the plants and animals within it without the assistance of Partners. All of the Service's field units mentioned earlier are involved in restoration projects of one kind or another. These restoration projects include wetlands restoration, streambank revegetation and riparian habitat restoration, aquatic habitat restoration, moist soil management, wetland and upland forest restoration and replanting, instream flows for aquatic life, water temperature and water quality improvement, and fish passage. Under its many programs, the FWS develops partnerships with other Federal agencies such as the Corps of Engineers, State fish and game agencies and other State entities, conservation organizations such as Ducks Unlimited, which is represented here on this panel, industry partners, local organizations, and stakeholders with an interest in a given restoration project. The FWS also participates in partnerships to develop and disseminate restoration information. An example is the unprecedented cooperative effort that went into development of the book, "Stream Corridor Restoration: Principles, Processes and Practices." 15 Federal agencies collaborated in the development of this publication which has received national and international acclaim. The book provides stream corridor restoration technology to serve as a common technical reference. It is a benchmark document that is being used by these agencies, as well as many others, who are interested in restoring the functions and values of the nation's stream corridors.

There are 4 areas of partnerships I would like to briefly discuss today. The first is our traditional role under the Fish and Wildlife Coordination Act as partners with the Corps of Engineers in the planning of water resource development projects. The Fish and Wildlife Coordination Act provides that:

- Fish and wildlife conservation is to receive equal consideration and be coordinated with other project features;
- Before proposing or authorizing a water resources development project, the Corps must first coordinate with the FWS (and with the State fish and wildlife agency) to conserve fish and wildlife resources. This is done by preventing loss or damage to these resources and by providing for their development and improvement.
- The Service provides reports and recommendations the impacts of proposed project on fish and wildlife resources, measures to mitigate for project impacts, and features recommended for fish and wildlife conservation and development.

The Fish and Wildlife Coordination Act authorizes the transfer of funds to the FWS for its investigations and preparation of reports and recommendations. The FWS should be an active planning team member involved early in the process before planning

has gone too far and irretrievable commitments have been made to a certain course of action. The National Transfer Funding Agreement between the FWS and Corps of Engineers specifies how coordination under the Act is to take place and funding is to be provided to the FWS for its work. The Fish and Wildlife Service is the Federal agency through which the Corps is supposed to first negotiate for fish and wildlife investigations and information. The Corps sometimes contract out work, citing the congressional requirement to contract 35% of its planning work. Close coordination is to be maintained between the district and FWS field offices. Annual meetings are conducted to determine the funding needs to support FWS involvement and to review the status of projects. Close coordination is called for, and information is to be exchanged between FWS and district personnel in a timely manner. Funds for the involvement of the FWS are to be included in the Corps' budget requests. Each fiscal year, the Corps and the FWS are supposed to jointly prepare a scope of work and budget for each study or project on which the involvement of the FWS is being requested. These are revised as needed by changing situations. The Corps is also supposed to keep the FWS on the status of projects and funding for FWS involvement..

Several issues have been identified in recent years that impede better partnerships between the FWS and the Corps in project planning:

- The FWS needs to be an active planning team member fully involved in project planning in order to be an effective partner.
- The FWS also needs to be involved early in the planning process before decisions and commitments made to a particular course of action. Only in that way can the FWS effectively partner with the Corps in project planning. Sometimes, coordination does not start until well into the planning process, leaving the FWS at a disadvantage in providing early input and being able to influence project planning.
- In many instances coordination is occurring less frequently than needed to maintain an effective partnership, or is not occurring at all. Some offices report that they must contact the Corps to try and get information about planning starts and efforts.
- The FWS must also be provided with project-related information according to the schedule specified in the scope of work to be able to provide the required fish and wildlife information needed by the Corps. When project schedules slip or changes are made in the project, the FWS needs to be notified and schedules adjusted accordingly. Too often the FWS receives information well after the time called for, but is still asked to provide its FWCA reports according to the original schedule.
- The Corps needs to contact the FWS first for fish and wildlife investigations in compliance with FWCA requirements. If the FWS cannot conduct the work, selection of a subcontractor will be a joint decision of the Corps and the Service. In this way, the FWS can insure that the information developed will meet its needs for complying with the reporting requirements of the FWCA. Only the FWS can prepare the Federal reports called for under the FWCA (except when NMFS is involved).
- The FWS does not receive base funding for its FWCA work on Federal water resources development projects. The funding needs of the FWS are to be

determined through annual negotiations with the Corps and included in the Corps' budget submittals to Congress. The process must be properly followed to insure that adequate funding is available for FWCA work.

Another issue is what I will call missed opportunities for wetlands restoration. Several Mississippi River and Tributaries Projects represent examples of such missed opportunities. These include the Yazoo Backwater Pumps Project, Big Sunflower River Project, and St. Johns/New Madrid Floodway. In these projects, the Corps has focused on "traditional" structural solutions to flood damage reduction, such as levees, steam channelization, and installation of pumps to lower groundwater levels. Nonstructural methods of flood damage reduction such as flowage easements on frequently-flooded lands, relocation of flood-prone structures, and lands uses that are more compatible with seasonal flooding, provide economic benefits AND encourage ecological restoration, but have not been given adequate consideration in the design of most Corps projects. Further, with the many restoration and preservation authorities in the Corps arsenal and the mandate that fish and wildlife receive equal consideration, these projects should have been developed to include a higher standard of environmental protection and restoration balanced with other project purposes. Two recent studies have shown that nonstructural methods can contribute significant benefits to flood control projects by encouraging landowners to restore frequently-flooded agricultural lands to bottomland hardwood forests or other natural habitats. Benefits of such restoration include economic and environmental gains through reduced crop losses, lower sedimentation and nutrient pollution of aquatic resources, and reduction in atmospheric carbon dioxide. The FWS will continue to urge the Corps to incorporate nonstructural methods to the extent possible in the design of flood damage reduction projects. It will also recommend that a thorough analysis of alternatives be conducted that includes meaningful consideration of nonstructural measures.

Various authorities enacted under Water Resources Development Acts in recent years have expanded the opportunities for partnering with the Corps of Engineers on restoration projects. As you all know, since 1986 Water Resources Development Act provisions have added authorities relating to mitigation, environmental protection and restoration in conjunction with Corps projects, and authority to conduct protection and restoration projects in general. These authorities have been used in partnerships with the FWS. Section 204 authorizes the Corps to carry out projects for the protection, restoration and creation of aquatic habitat, including wetlands, in conjunction with dredging projects. Section 206 provides authority for the Corps to carry out projects for aquatic ecosystem restoration and protection. Section 1135 authorizes the Corps to modify the structures and operations of its projects to improve the quality of the environment and to undertake "retrofit mitigation" (measures for restoration of environmental quality where the construction or operation of a water resources project built by the Corps has contributed to the degradation of the environment). These and other authorities expand the horizons for partnerships with the FWS and others in restoration projects to protect and restore fish and wildlife resources. Such partnerships have been undertaken by many of the FWS programs. For example, The FWS' Coastal Program in Puget Sound is undertaking a number of projects on the Duwamish River Estuary in which the Corps of Engineers is a restoration partner under the Coastal Program and the Corps' 1135 program. One involved demolition of an old ferry boat and

removal of fill at an old turning basin, regrading to intertidal elevations and revegetation with salt marsh vegetation and native trees and shrubs in developing riparian habitat, all for the benefit of salmon.

The FWS's North American Waterfowl and Wetlands Office implements the North American Waterfowl Management Plan's Joint Ventures and North American Wetlands Conservation Act. The Act encourages partnerships to protect, enhance, restore and manage wetland ecosystems and other habitats for migratory birds and other fish and wildlife through strategies such as habitat acquisition, conservation easements, leases, and management agreements with private landowners. The Corps is involved in a number of Joint Venture projects in throughout the country. The Corps is involved under the 1135 program and other authorities.

The FWS's Partners for Fish and Wildlife Program, in partnership with the Corps, State of New Jersey and other partners, has completed one Fishway Restoration Project on the Cooper River, is moving forward with another project on the Rancocas River, and has another project in the planning stage for Batsto Creek. These projects provide passage for alewife, blue back herring and American eel. Corps projects are used in partnership with Refuges in the National Wildlife Refuge System to improve habitat or other conditions by restoring habitat on Refuge lands, as well as improving conditions off the Refuge, but affecting Refuge lands. For example, The New Orleans District has made excellent use of WRDA Sect. 204 and 1135, partnering with the State of Louisiana (Coastal Wetlands Trust Fund) for the non-Federal cost share, restoring coastal wetlands via placement of dredged material in shallow open water at several sites including Sabine National Wildlife Refuge, and have used dredged material to restore barrier islands, including lands managed by FWS at Breton NWR, using spoil from maintenance of the Miss. River-Gulf Outlet. The Little Falls Fishway Project was implemented to restore passage for the American shad to 10 miles and 1,000 acres of spawning habitat on the Anacostia River in the Nation's capital. Originally a Corps of Engineers 1135 project, expanded partnerships with the FWS and 16 other organizations was developed because of the complexity and cost of the project.

We believe that the Corps Challenge 21 program will offer another opportunity to expand partnerships. The Challenge 21 program was authorized by section 212, Flood Mitigation and Riverine Restoration, of the Water Resources Development Act of 1999. It authorizes the Corps to undertake projects to reduce flood hazards and restore the natural functions and values of rivers. Emphasis is to be placed on nonstructural projects, to the maximum extent practicable. Coordination and consultation is to take place with appropriate Federal, State and local agencies and tribes to insure coordination with local flood damage reduction or riverine and wetland restoration studies with projects that conserve, restore, and manage hydrologic regimes and restore the natural functions and values of floodplains. The FWS sees this as another expanded authority to look at projects on a larger scale, looking at watersheds and taking a holistic approach to restoration planning.

The FWS believes there are a number of measures that can be taken to increase partnership opportunities between the FWS and the Corps. There are a number of things we can do to improve and expand partnerships between the FWS and the Corps. Improving coordination between our respective agencies is probably one of the single most effective things we can do to improve partnerships as well as better integrate and

consider fish and wildlife needs and restoration opportunities into the Corps' planning process. This includes ensuring that the FWS is:

- Involved from the very beginning of the planning process.
- Involved in the the Expedited Reconnaissance Study process and Continuing Authorities Project studies. Particularly with the Expedited Recon process, the Service is often either not involved or involved to a very limited extent.
- Increasing the opportunities for partnerships through working together to identify needed restoration projects. It is often said that the Corps looks to the Service for needed restoration project. The Service and the Corps should work together with other stakeholders to develop projects that meet needs identified by priorities such as the FWS Ecosystem Approach.
- Adhere to the provisions of the National Transfer Funding Agreement. Following the Agreement insures that the the FWS has the funding to conduct its FWCA work, since it receive no base funding for this. It also will ensure that adequate coordination takes place and that both agencies are clear on what is expected of each in the process.
- A need has been shown for joint training on the Corps' planning process and FWS involvement and input into the process. In many instances, Corps personnel may not be familiar with the FWS involvement in the planning process, and FWS personnel are not familiar with the Corps planning process.
- Opportunities to increase partnerships are available through the coordinated used of our respective authorities, as well as involvement of other interests and stakeholders in partnerships. Often, no single entity has the financial ability to implement a given restoration project. However, by working together and leveraging funding, the desired results can very often be achieved.
- Working at the local level and involving all stakeholders is critical to insuring success as well as developing a range of financing options.
- Evaluation of projects in terms of the watershed of which they are a part is critical to insuring that a project will accomplish the desired results and will continue to function over time. For example, just stabilizing a streambank where the hydrology has been drastically modified may be wasted time and effort.
- The cost-sharing requirements of WRDA restoration authorities for habitat restoration and enhancement studies and projects may create a problem because local sponsors do not have sufficient funds. Maximum flexibility is needed in accepting local and State in-kind services and material in contribution to the local share.

The FWS was involved in the development of a publication that can be helpful as we look for opportunities for partnerships. For environmental Matters, voluntary partnerships are a way of working with people to focus on what can be done together if the partners choose to do so. Conservation Partnerships is an Introduction to Partnerships that introduces the basic concepts of developing partnerships, provides initial guidance on selecting projects, helps in locating potential Partners, addresses how to make partnerships successful, and provides possible partnership complications.

Again, thank you for the opportunity to be here today to discuss the very important topic of partnerships in restoration projects. The FWS believes there are a number of measures that can be taken to increase partnership opportunities between the FWS and the Corps.

Stephen E. Adair, Ph.D.
Director of Conservation Programs
Ducks Unlimited, Inc.

Biography:

Stephen E. Adair is the Director of Conservation Programs for Ducks Unlimited, Inc. a private, non-profit, international conservation organization located in Memphis, Tennessee. Dr. Adair assumed this position with Ducks Unlimited, Inc. in June 1997. Previously, he was employed as an ecologist for several private landowners in Georgetown, South Carolina from 1994-1997. He received his Ph.D. in wildlife ecology from Utah State University, his M.S. in wildlife management from Texas A&M University, and his B.S. in biology from the University of Texas. His graduate research focused on aspects of wintering waterfowl ecology, aquatic plant ecology, and wetland ecology.

Dr. Adair has served on many planning and implementation committees including the Winyah Bay Task Force of the Atlantic Coast Joint Venture, the citizens Ambassador Delegation in Wetland Conservation to Australia and New Zealand, the National Riparian Roads Team, and the Forested Flyways Planning Committee. Dr. Adair has extensive experience in wetland management and research including program development, supervision, and evaluation. Current responsibilities include oversight of Ducks Unlimited's national conservation program including land protection, project tracking, contract compliance, incorporating all birds into DU's conservation planning, carbon sequestration programs, and coordination of the use of GIS into strategic planning. Dr. Adair has been involved in wetland research and management throughout the United States and has authored and co-authored numerous scientific journal articles and management handbooks.

Presentation:

What is Restoration? The National Research Council defines it as "The return of an ecosystem to a close approximation of its condition prior to disturbance." "The goal is to emulate a natural, functioning, self-regulating system that is integrated with the ecological landscape in which it occurs." Restoration requires looking at long- and short-term floodplain processes. Long-term processes involve broad-scale climatic patterns. Short-term processes include hydrology, nutrient dynamics and ecosystem structure.

Ducks Unlimited asks what is the need for restoration? Examples of identified restoration opportunities include:

- The Mississippi Alluvial Valley. The distribution of bottomland hardwoods has declined 80%. The MAV is an important wintering area of midcontinent mallards in North America and probably in the world (1-5 million birds annually).

- Western Riparian Wetlands. These are narrow strips of forests in arid regions which typically flood in spring with snowmelt. Vegetation is characterized by cottonwoods, willows, green ash, box elder, American elm, bur oak. In the last 100 years, 95% have been altered or lost.
- North Dakota Native Grassland. The effects of grassland loss is increased sedimentation, increased eutrophication and increased predation.

Restoration planning must be done at the landscape and site-specific levels. Critical processes include hydrology, chemistry, physical structure, fragment size, connectivity, and sedimentation and erosion. Wetland hydrology involves the depth, duration, timing and source of flooding. It determines the species of vegetation and plant and animal productivity. Vegetation and timing of flooding determines the wildlife attracted to the site. Fish migrations and spawning are often triggered by flooding events. Wetland biochemistry involves the major chemical transport and pathways which are driven by flood events. Flooding deprives soil and roots of oxygen, which is very stressful during the growing season. Rich soils are replenished by flood events. Flood waters are filtered and purified by wetlands.

In choosing a restoration site, Ducks Unlimited considers:

- Is it a formerly drained wetland? Creation is much more difficult.
- Is site flooding naturally? Don't fix if it is not broken.
- Is there low relief and impermeable soils to hold water?
- Is there a central channel or drainage canal?
- Where is the water source?
- Are there nearby sources of wildlife populations and complex support?

Restoration goals address what was there, the adjacent landscape and the desired responses, with respect to fish and wildlife populations, water quality and flood control. Restoration techniques may include restoring native vegetation, restoring or enhancing hydrology, re-establishing physical processes, implementing best management plans, and monitoring responses. Guidelines used by Ducks Unlimited for restoring hydrology include:

- Reconnect the floodplain to the river if possible if not relying on rainfall or wells as a water source
- Construct low dike and install water control structures
- Structures should be large enough to prevent ponding during the growing season
- Establish management plan to simulate natural hydrograph

Monitoring and evaluation is an important for adaptive resource management (ARM). Performance measures are related to seedling survival, water levels, species composition, productivity/growth, and wildlife use.

What is missing? Connectivity to river channel, sediment and erosion processes and filtering of floodwaters through wetlands.

What is rehabilitation? The National Research Council defines it as "Improvements of a visual nature to a natural resource; putting back into good condition or working order." "True floodplain restoration is impossible unless the hydrologic and geomorphic processes that drive these systems over the long-term are also restored."

The advantages of partnership opportunities with the Corps are that each bring unique expertise and perspectives to table, it allows all to leverage funds, it creates more

comprehensive approach, it builds consensus within communities, and the majority of opportunities are on private lands. Past successes include five projects in the Southern Region, five in the Great Plains Region, four in the Great Lakes/Atlantic Region and one in the Western Region. Ducks Unlimited served in various roles including sponsor, design/build, survey/design, and consultant. Specific future opportunities include projects in the vicinity of the Cache River, Galla Creek, and Carbon City, Arkansas, and Tarrant County Texas. General future opportunities include providing biological and engineering design for wetland restoration portions of larger flood control projects, providing GIS modeling for targeting restoration sites, the receipt of in lieu mitigation funds, which could be expanded across the country, and sponsoring projects.

Common ground for Ducks Unlimited and the Corps is viewed as:

- Wetland restoration required to:
- Replenish dwindling water supplies
- Help solve hypoxia in estuaries
- Help reduce greenhouse gases
- Help recovery of declining species
- Many opportunities to combine our organizational strengths
- Good soil and water conservation will benefit all of society